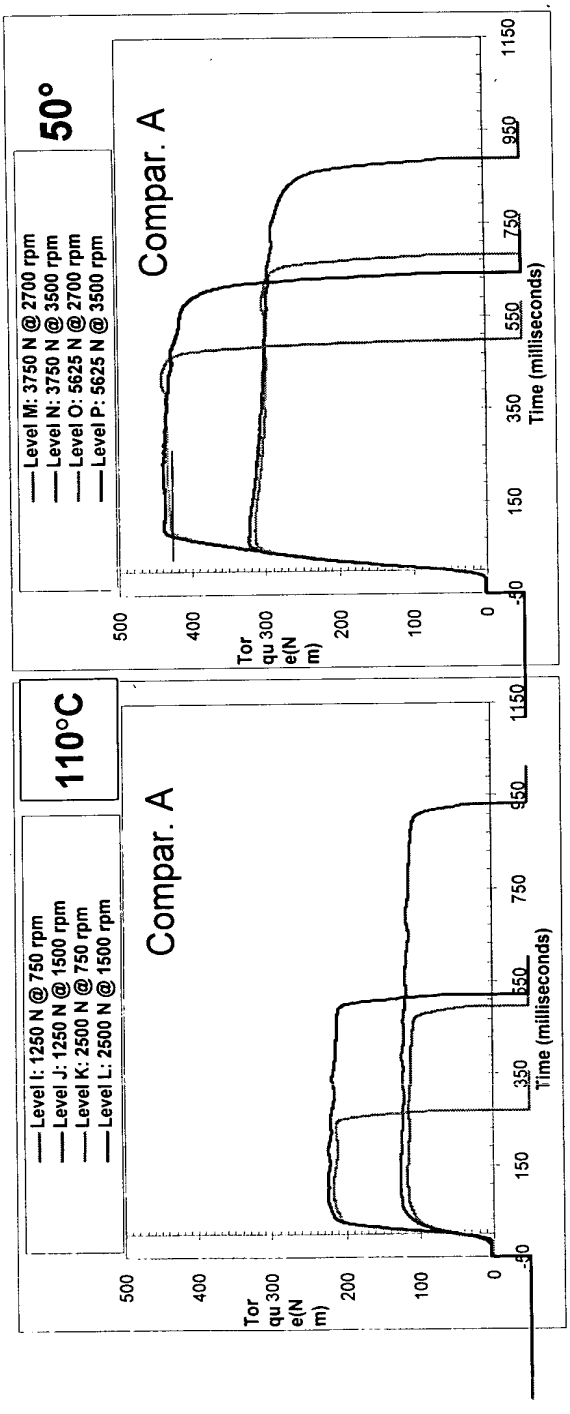
Level I: 1250 N @ 750 rpm
Level J: 1250 N @ 1500 rpm
Level K: 2500 N @ 750 rpm
Level L: 2500 N @ 1500 rpm
110°C
Compar. A
Torque (Nm)
Time (milliseconds)
Level M: 3750 N @ 2700 rpm
Level N: 3750 N @ 3500 rpm
Level O: 5625 N @ 2700 rpm
Level P: 5625 N @ 3500 rpm
50°
Compar. A
Torque (Nm)
Time (milliseconds)

Fig. 1a

Fig. 1b

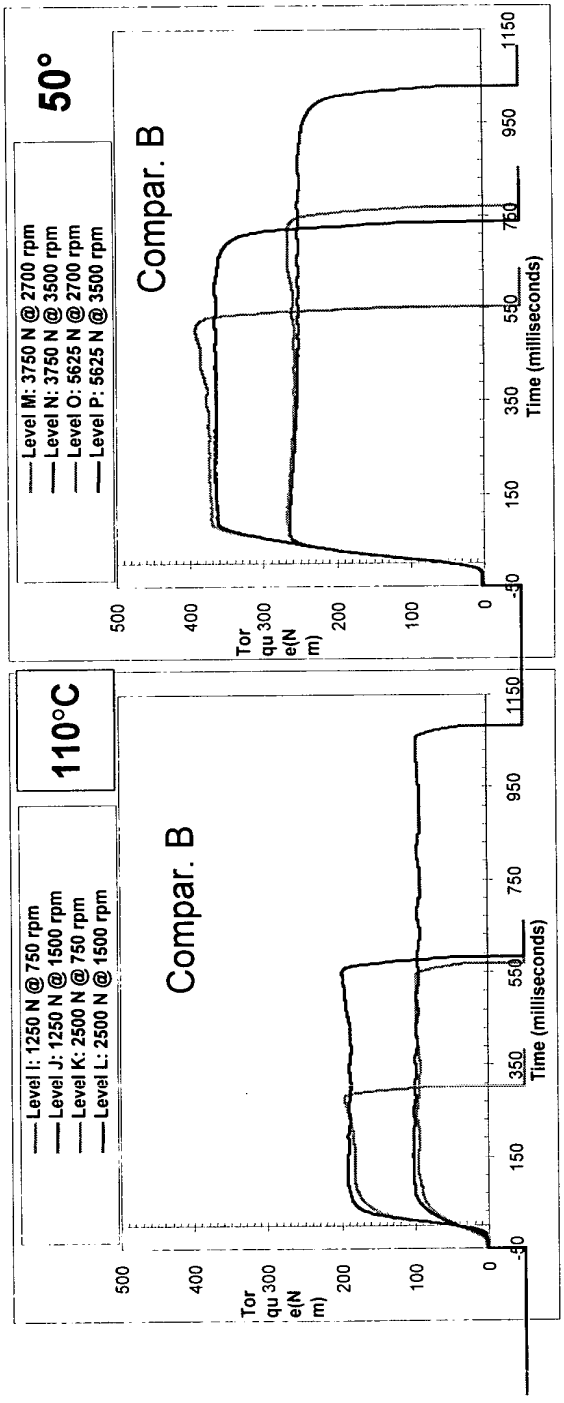
110°C
Compar. B
Level I: 1250 N @ 750 rpm
Level J: 1250 N @ 1500 rpm
Level K: 2500 N @ 750 rpm
Level L: 2500 N @ 1500 rpm
Tor qu e(N m)
Time (milliseconds)
50°
Compar. B
Level M: 3750 N @ 2700 rpm
Level N: 3750 N @ 3500 rpm
Level O: 5625 N @ 2700 rpm
Level P: 5625 N @ 3500 rpm
Tor qu e(N m)
Time (milliseconds)

Fig. 2a

Fig. 2b

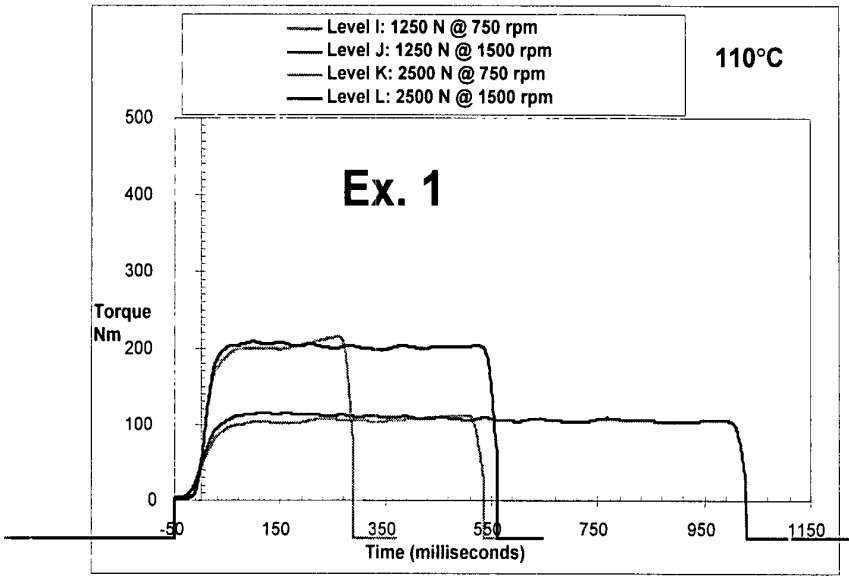

Fig. 3a

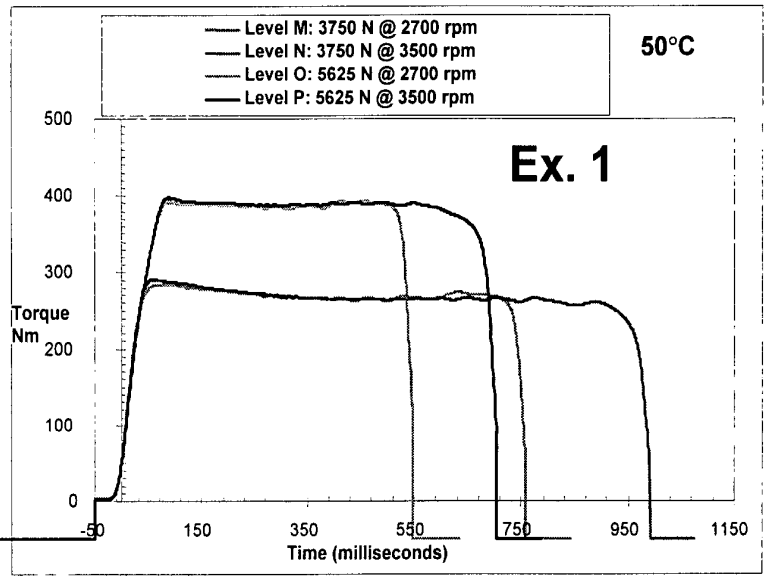

Fig. 3b

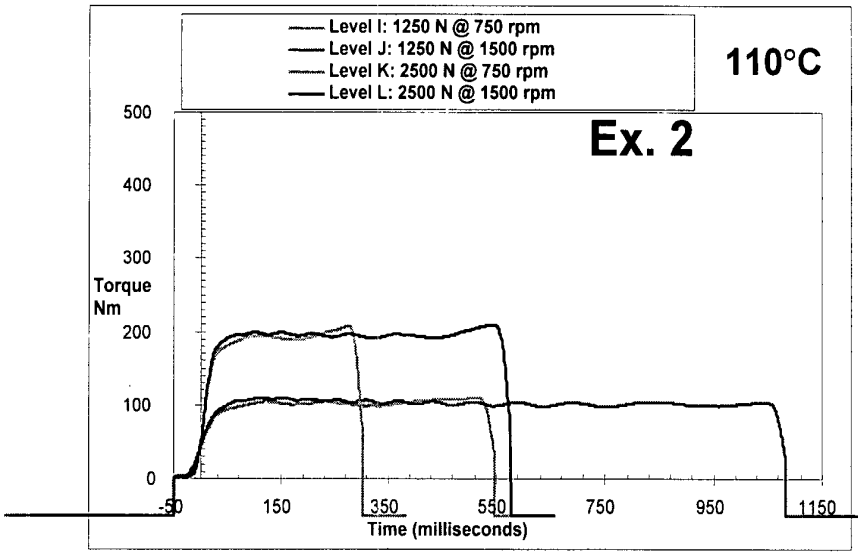

Fig. 4a

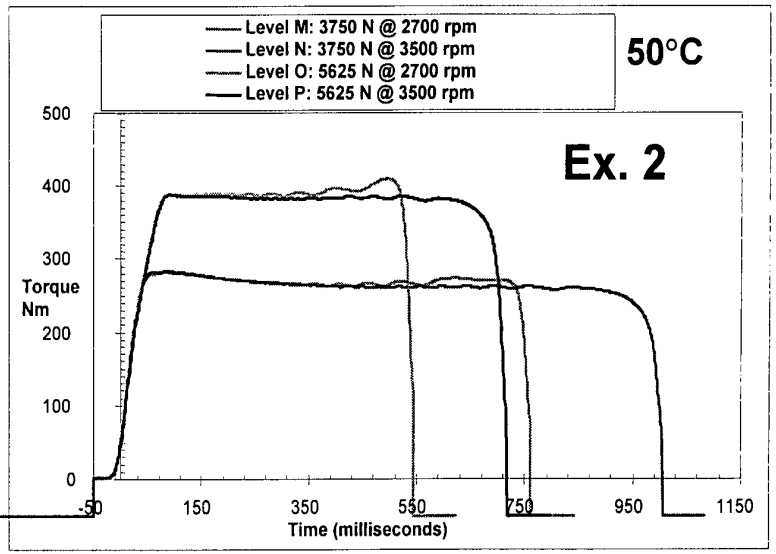

Fig. 4b

011707/22110
3 of 12

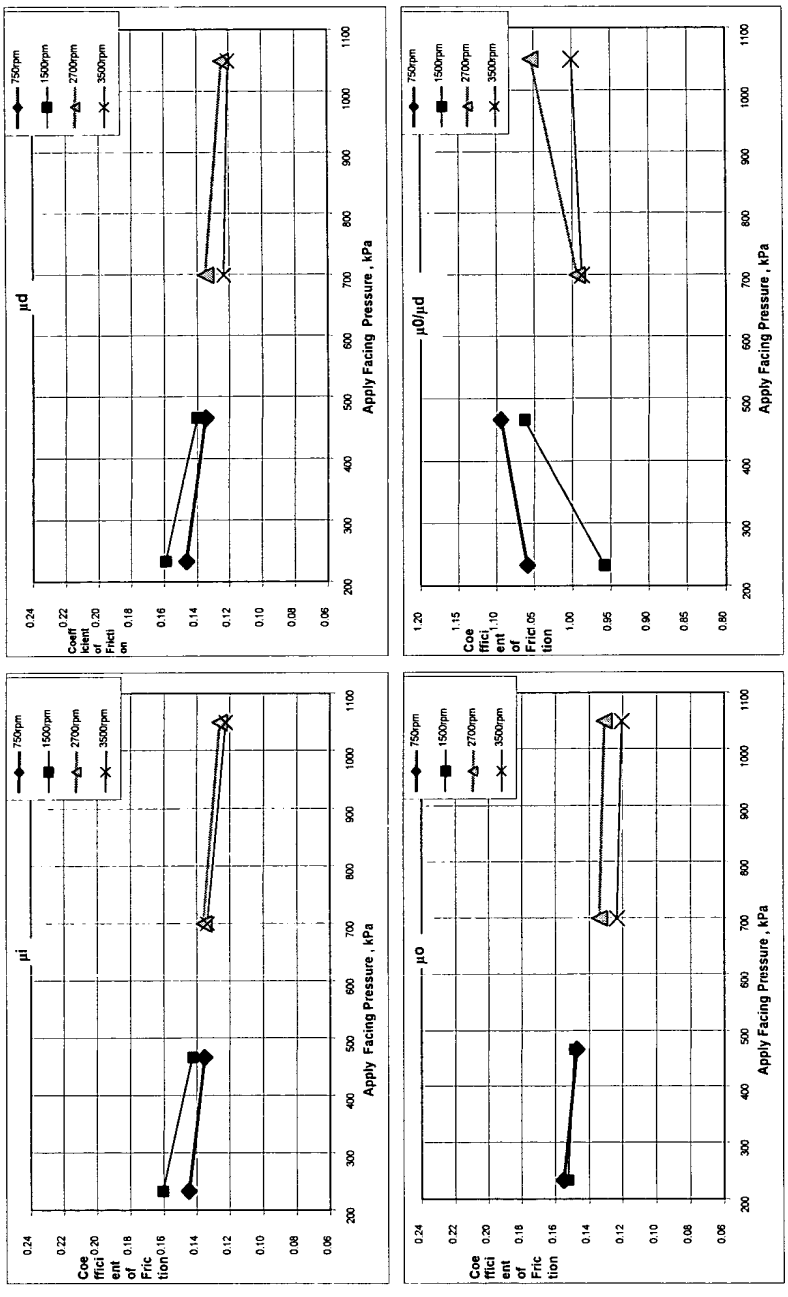

Fig. 5a

Fig. 5b

Fig. 5c

Fig. 5d

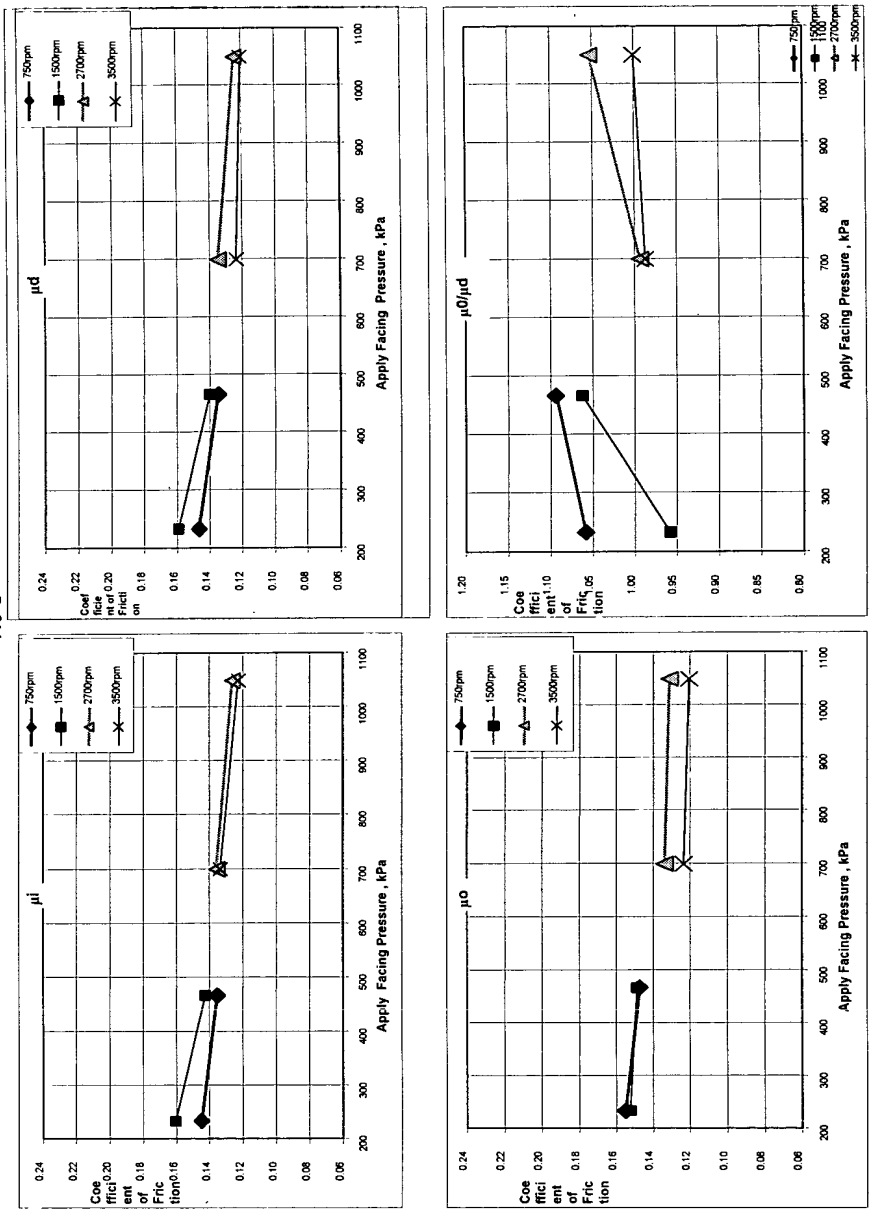

Fig. 6a

Fig. 6b

Fig. 6c

Fig. 6d

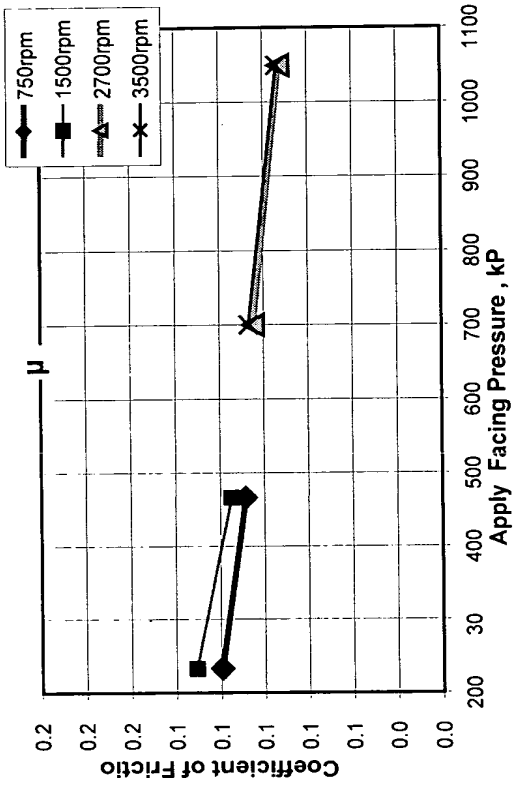

Fig. 7a

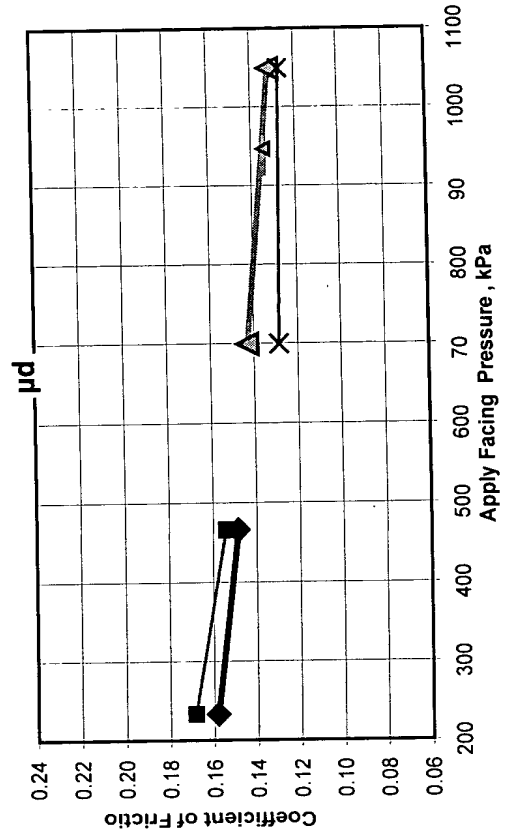

Fig. 7b

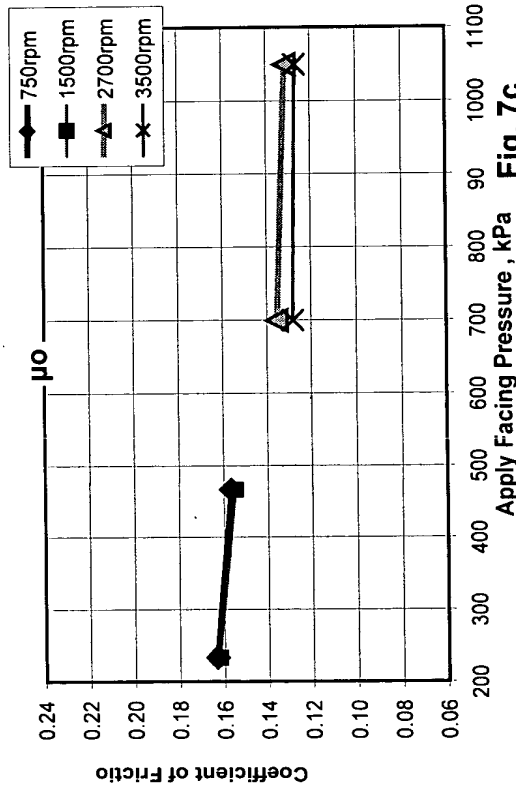

Fig. 7c

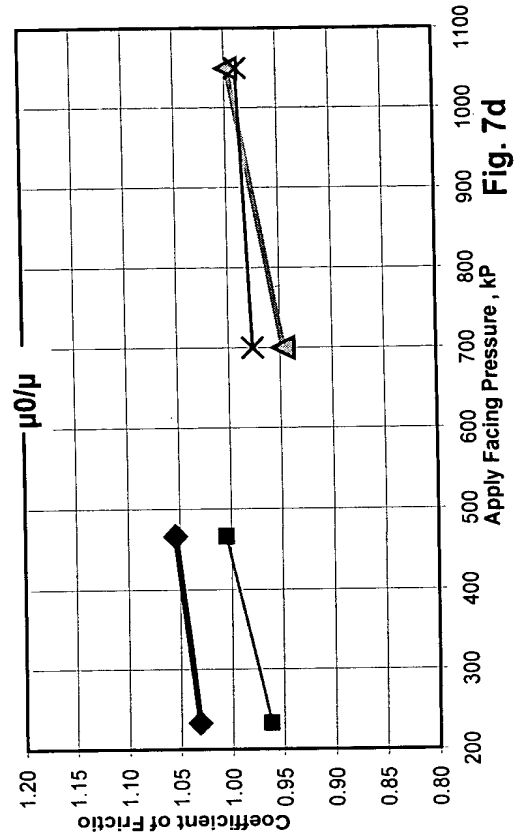

Fig. 7d

110°C

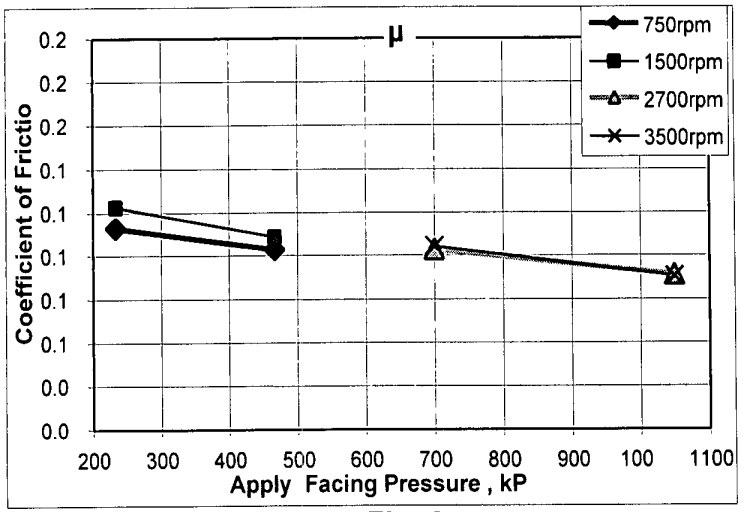

Fig. 8a

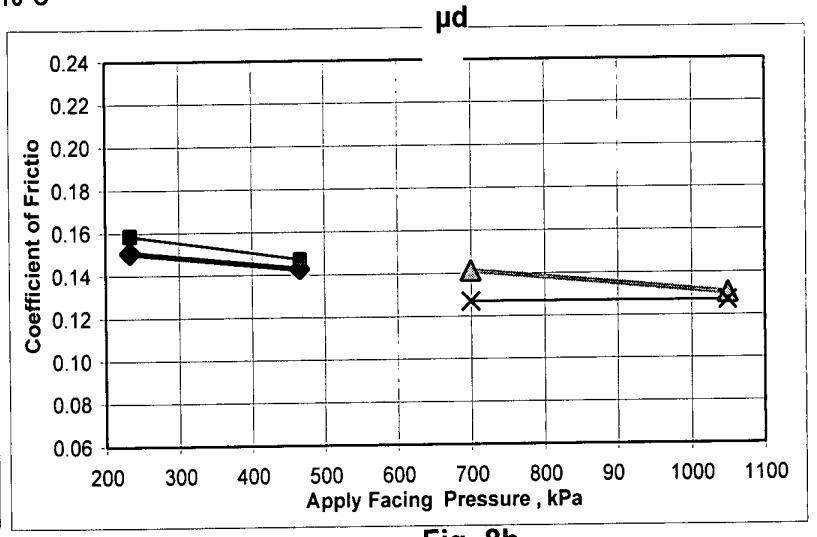

Fig. 8b

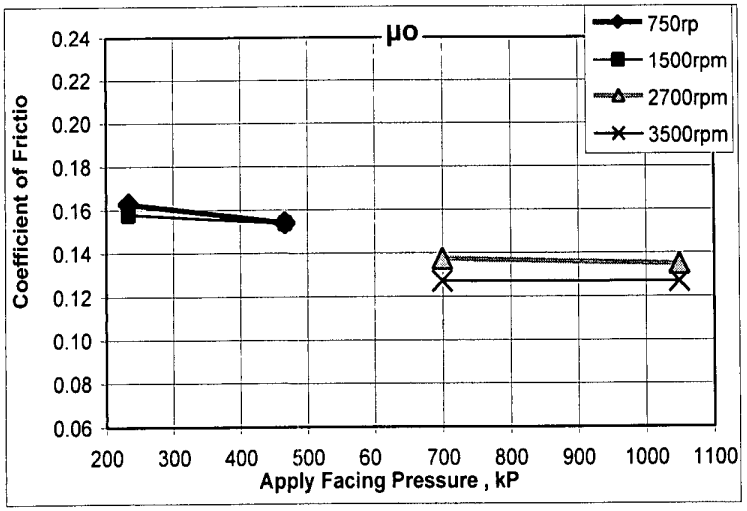

Fig. 8c

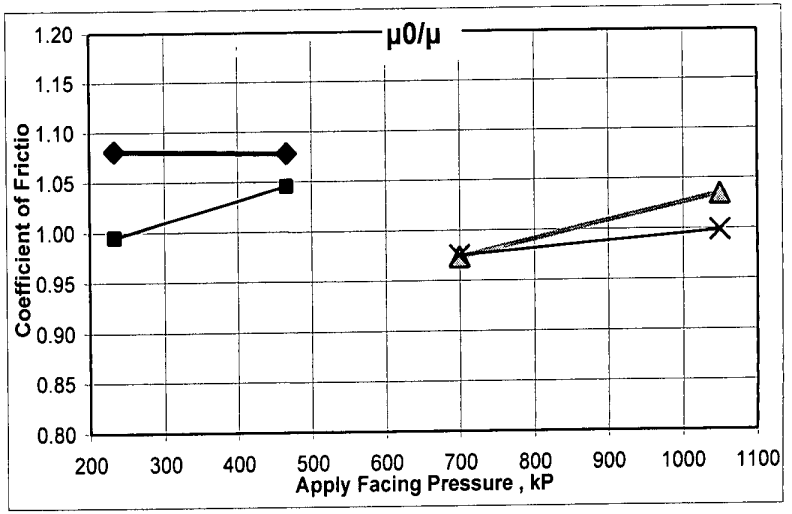

Fig. 8d

6/169/66/1/1
4 of 13

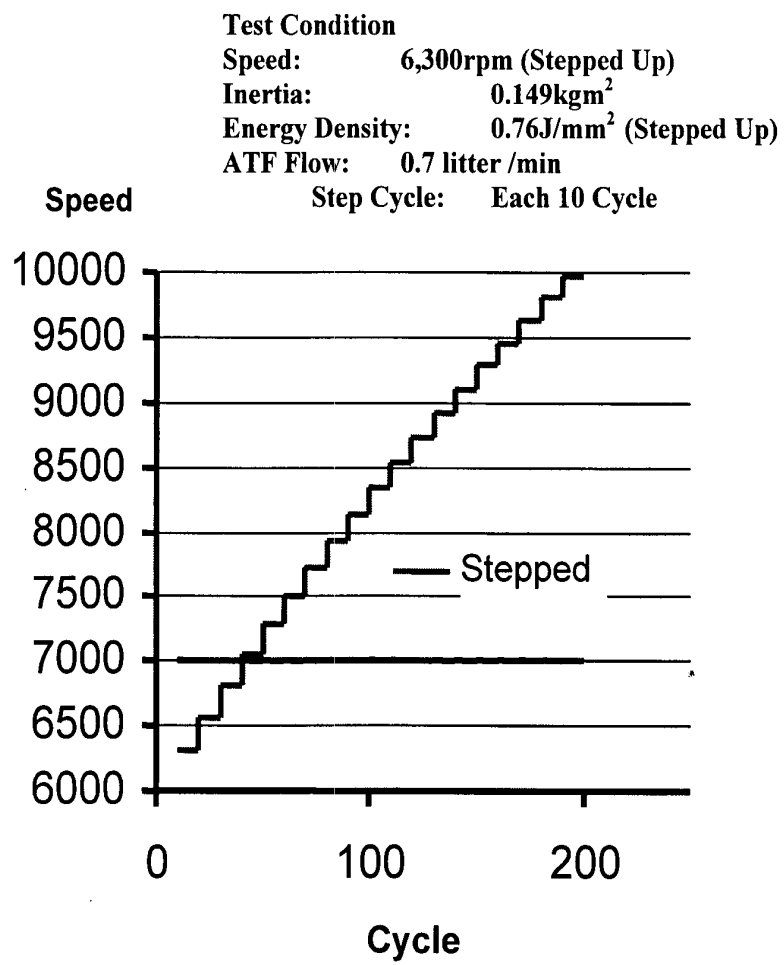
Test Condition
Speed: 6,300rpm (Stepped Up)
Inertia: 0.149kgm²
Energy Density: 0.76J/mm² (Stepped Up)
ATF Flow: 0.7 litter /min
Step Cycle: Each 10 Cycle
Speed
10000
9500
9000
8500
8000
7500
7000
6500
6000
Stepped
0
100
200
Cycle

Fig. 9a

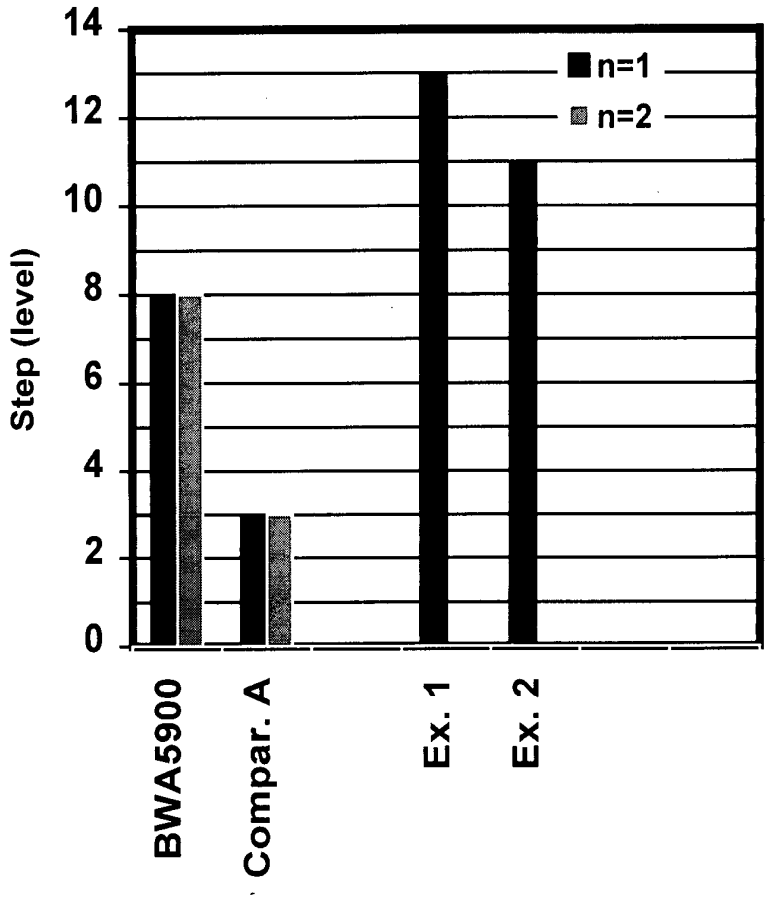
Step (level)
14
12
10
8
6
4
2
0
n=1
n=2
BWA5900
Compar. A
Ex. 1
Ex. 2

Fig. 9b

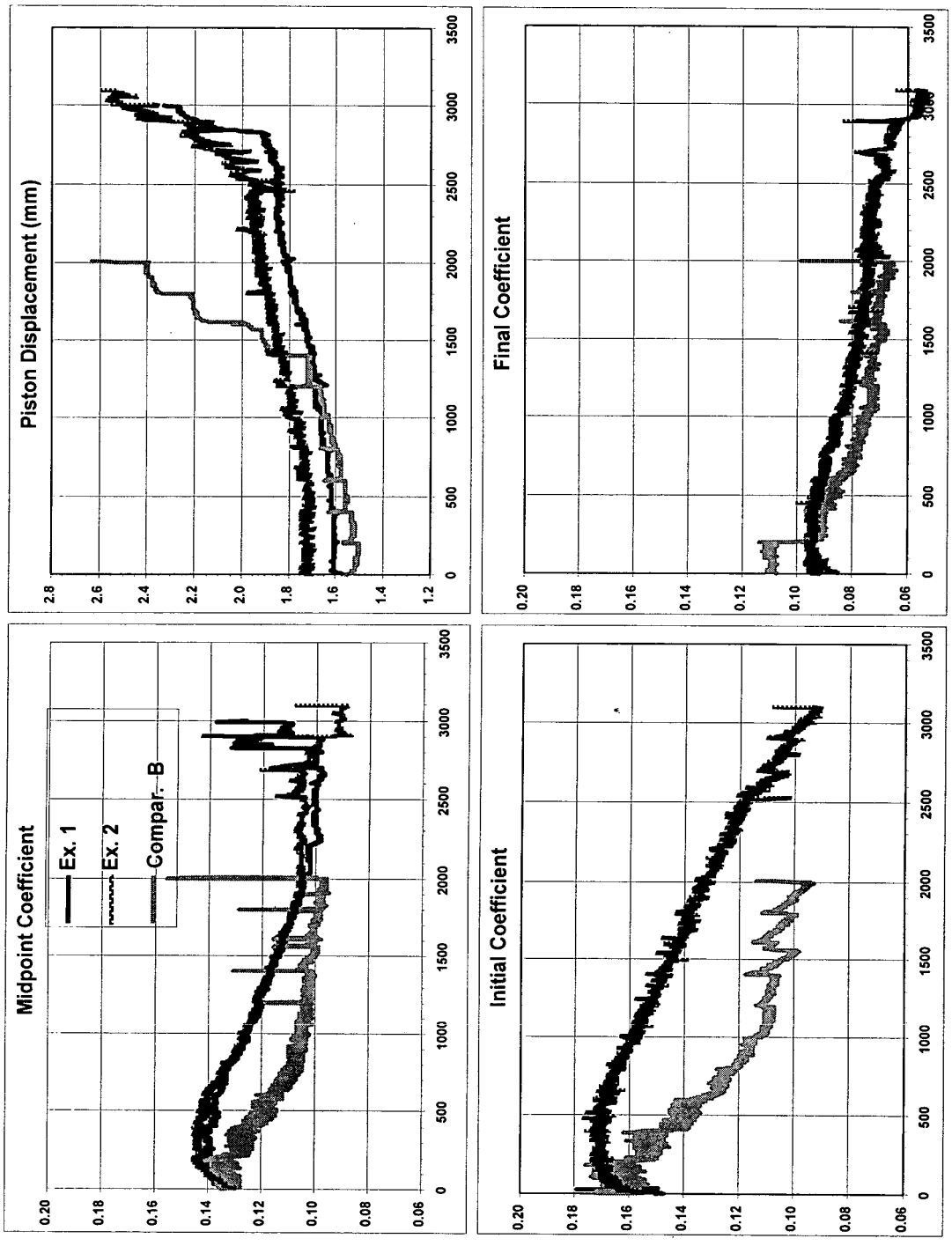

Fig. 10a

Fig. 10b

Fig. 10c

Fig. 10d

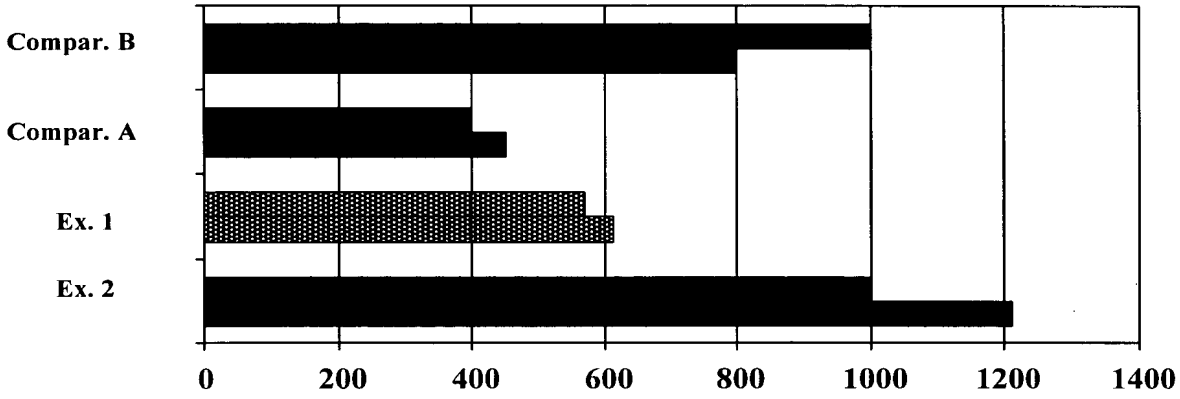
Compar. B
Compar. A
Ex. 1
Ex. 2
0
200
400
600
800
1000
1200
1400

Fig. 11

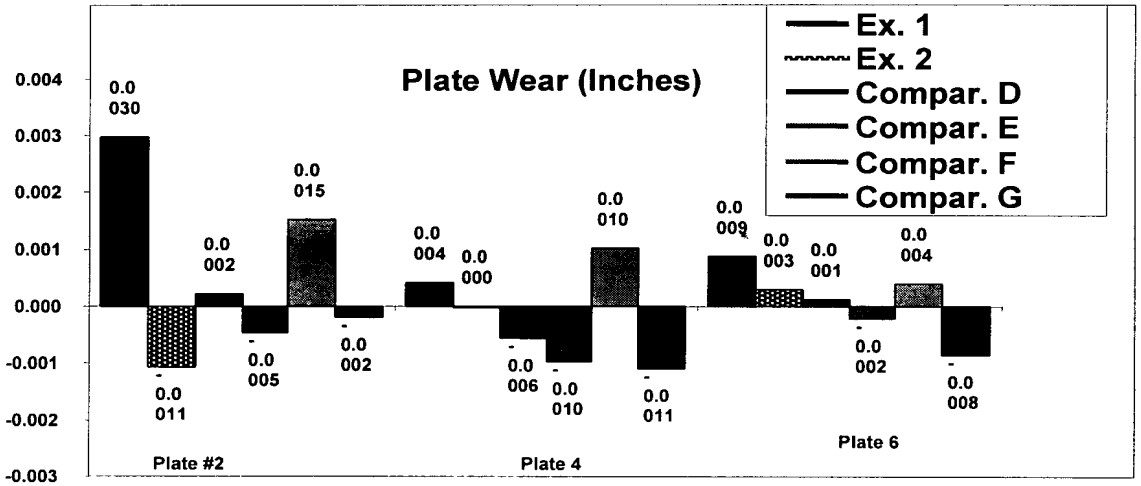
Plate Wear (Inches)
Ex. 1
Ex. 2
Compar. D
Compar. E
Compar. F
Compar. G
0.004
0.003
0.002
0.001
0.000
-0.001
-0.002
-0.003
0.0 030
- 0.0 011
0.0 002
- 0.0 005
0.0 015
- 0.0 002
0.0 004
0.0 000
- 0.0 006
- 0.0 010
0.0 010
- 0.0 011
0.0 009
0.0 003
0.0 001
- 0.0 002
0.0 004
- 0.0 008
Plate #2
Plate 4
Plate 6

Fig. 12

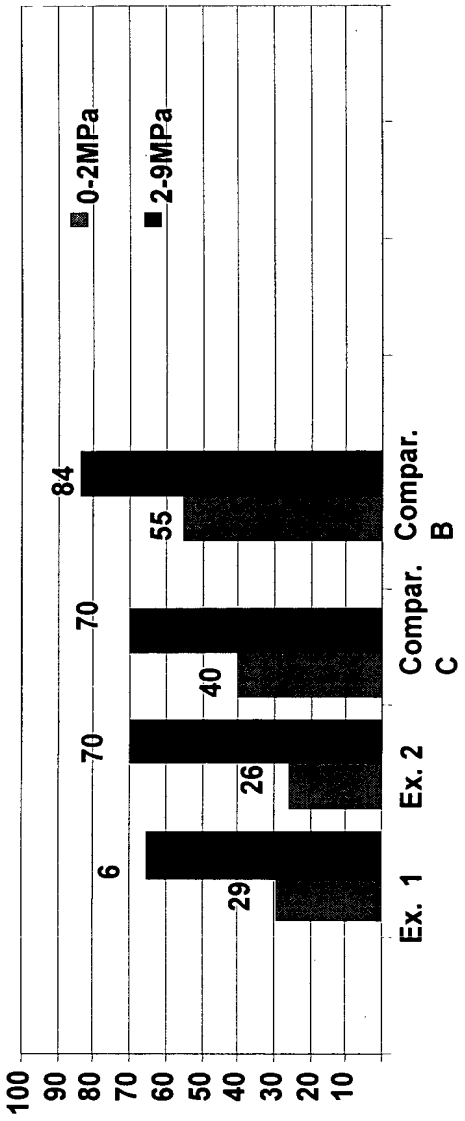
0-2MPa
2-9MPa
100
90
80
70
60
50
40
30
20
10
6
70
29
70
26
40
84
55
Ex. 1
Ex. 2
Compar. C
Compar. B

Fig. 13

μ-v Relationship (Constant Speed Method)

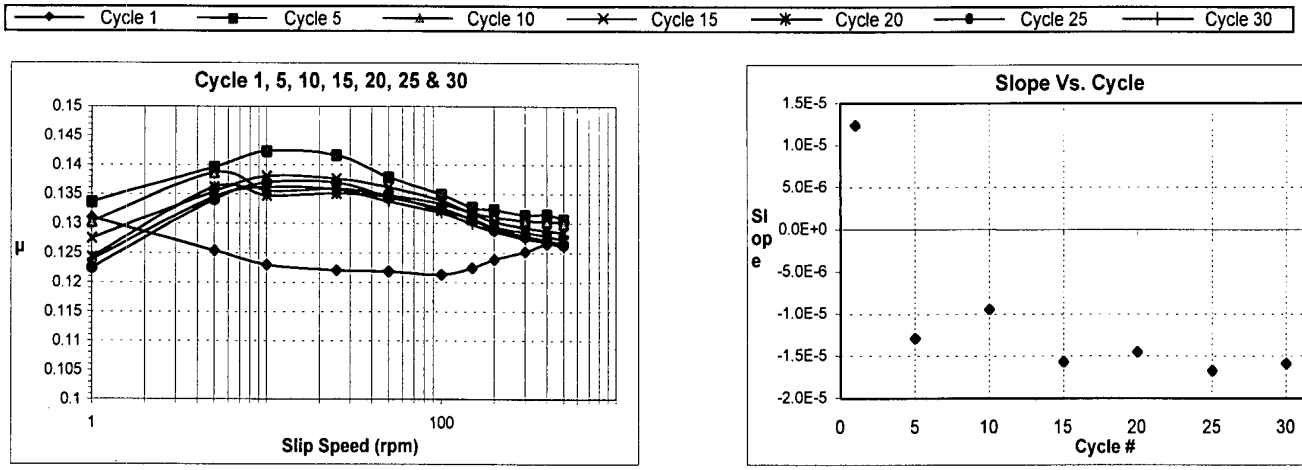

Fig. 14a

Fig. 14b

μ-v Relationship (Constant Speed Method)

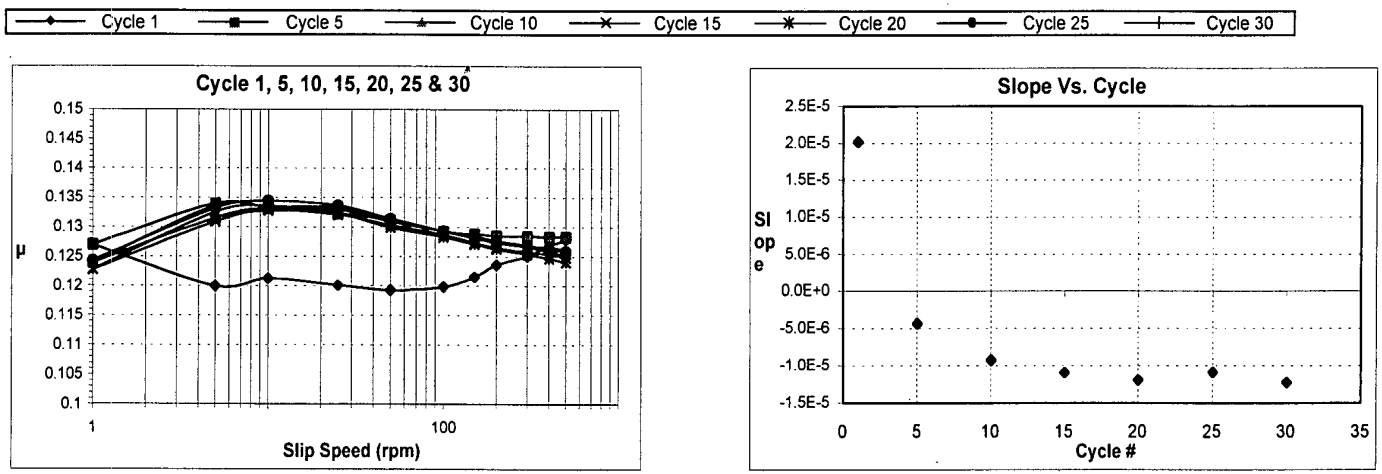

Fig. 15a

Fig. 15b

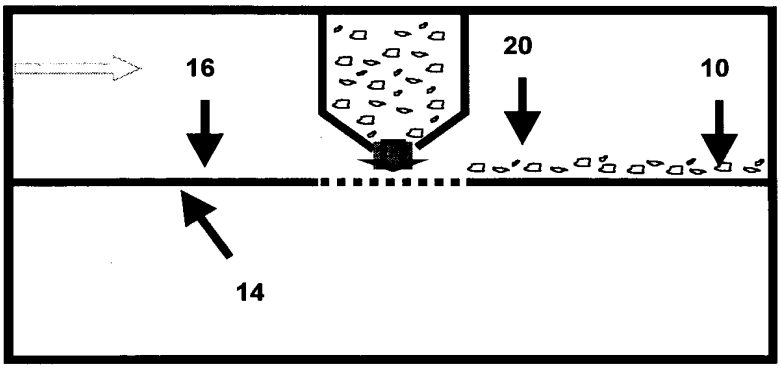

Fig. 16